

1N-35  
Report 11159  
8 June 1998

345706  
**GENCORP**  
**AEROJET**

**Integrated  
Advanced Microwave Sounding Unit-A (AMSU-A)  
METSAT A2 Signal Processor Engineering Test Report  
(P/N: 1331120-2, S/N: F02)**

**Contract No. NAS 5-32314  
CDRL 207**

**Submitted to:**

**National Aeronautics and Space Administration  
Goddard Space Flight Center  
Greenbelt, Maryland 20771**

**Submitted by:**

**Aerojet  
1100 West Hollyvale Street  
Azusa, California 91702**

**Aerojet**

**Report 11159**  
**8 June 1998**

**Integrated**  
**Advanced Microwave Sounding Unit-A (AMSU-A)**  
**METSAT A2 Signal Processor Engineering Test Report**  
**(P/N: 1331120-2, S/N: F02)**

**Contract No. NAS 5-32314**  
**CDRL 207**

**Submitted to:**

**National Aeronautics and Space Administration**  
**Goddard Space Flight Center**  
**Greenbelt, Maryland 20771**

**Submitted by:**

**Aerojet**  
**1100 West Hollyvale Street**  
**Azusa, California 91702**

## TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
2.0	OBJECTIVE .....	1
3.0	TEST DATA .....	1
4.0	TEST .....	1
5.0	TEST ANOMALIES.....	5
6.0	TEST RESULTS.....	5

## **1.0 Introduction**

This report presents a description of the tests performed, and the test data, for the A2 METSAT Signal Processor Assembly PN: 1331120-2, S/N F02. The assembly was tested in accordance with AE-26754, "METSAT Signal Processor Scan Drive Test and Integration Procedure".

The tests were conducted at room temperature in the AMSU-A test area of building 57. The tests fall into six categories: 1) Continuity, 2) Power Distribution, 3) Digital Processor, 4) Analog Processor, 5) Scan Drive, and 6) Supply Current.

## **2.0 Objective**

The objective is to demonstrate functionality of the signal processor prior to instrument integration.

## **3.0 Test Data**

All test data is presented on the enclosed copies of the test data sheets (TDSs) numbered A-15 through A-25. Redlined data sheets resulted from previous test on another unit.

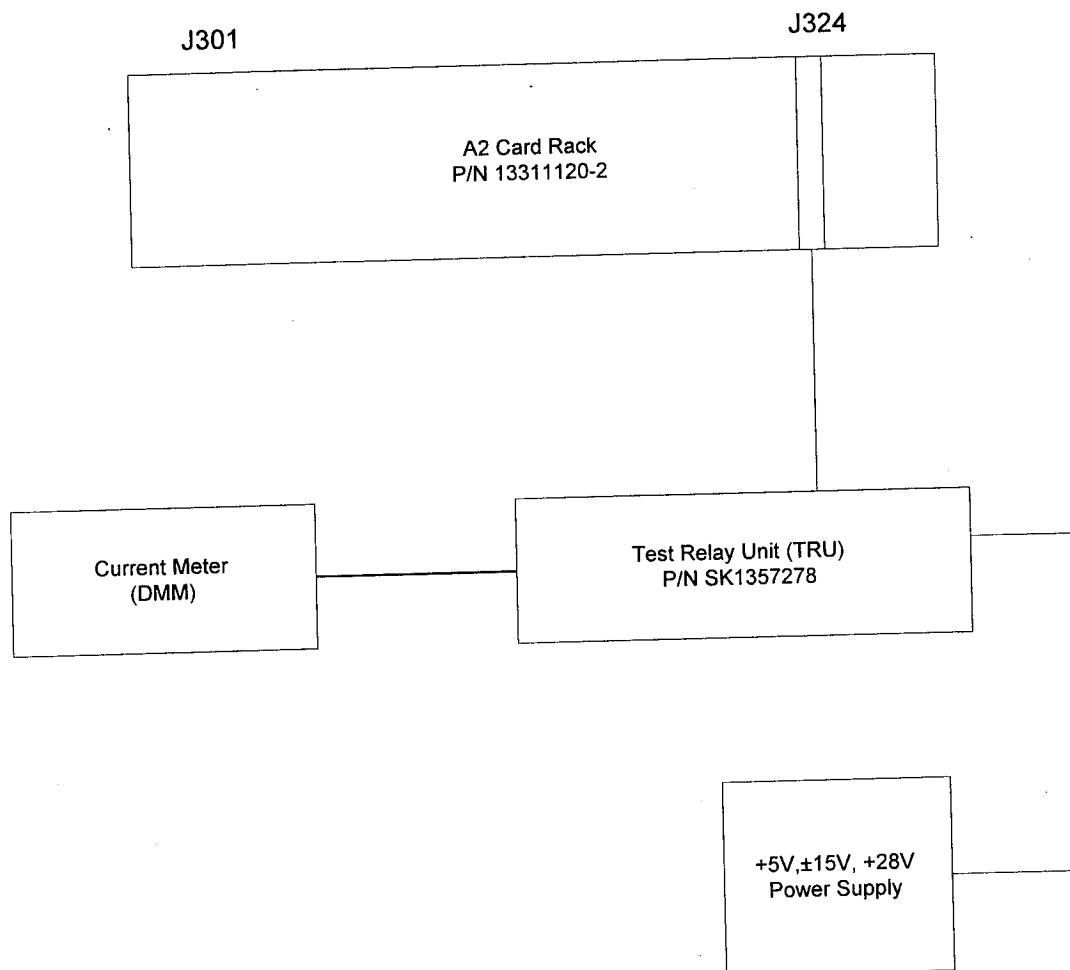
## **4.0 TESTS**

### **4.1 Continuity**

A complete continuity test of the backplane wiring is performed at the facility where the wirewrapping of the backplane is done. The continuity tests performed here involve 1) the I/O interface card slots, J301 and J324, 2) the Aerojet added twisted-shielded clock lines, and 3) chassis return connections. The tests are manual resistance measurements tests. Test data is presented on TDS 11.

### **4.2 Power Distribution**

In these tests supply voltages are input to the signal processor from the Test Relay Unit (TRU) as in normal testing. No CCAs are installed in the signal processor for the tests. The test verifies that the four supply voltages are present on the proper pins of all backplane connectors. The test setup block diagram is shown in Figure 1, and test data is presented on TDS 12.



**Figure 1. A2 Signal Processor Test Setup**

#### **4.3 Digital Processor**

Beginning with this test, CCAs are installed into the card cage as required to perform the test, and then remain installed. At the conclusion of all tests, a complete set of CCAs has been installed. The complete test setup block diagram which is required for performing any of the tests is shown in Figure 2.

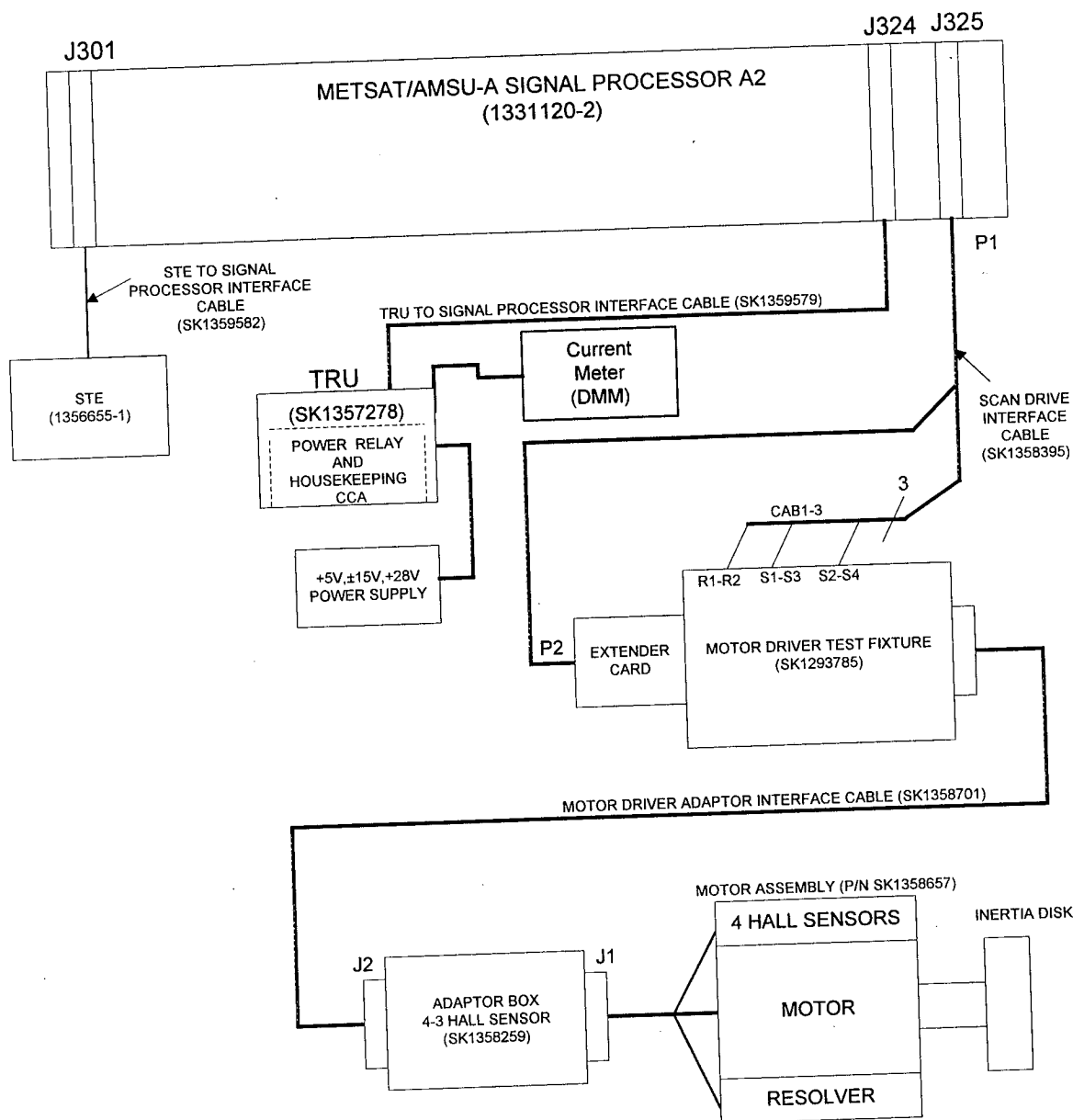


Figure 2. A2 Scan Drive Test Setup

#### **4.3.1 Memory**

In this test, the digital test set is used in place of the CPU CCA to read and verify data of the test PROMs on the "GOLD" Memory CCA. Test data is presented on TDS 13.

#### **4.3.2 CPU**

The CPU test requires that the CPU Auxiliary test CCA be installed in place of the Memory CCA. In this test, the RAM and various instructions performed by the CPU are tested. In addition, the waveform of the clock signal to the DC-DC converter is measured at the CLOCK jack on the TRU. Test data is presented on TDS 13.

#### **4.3.3 Scan Control Interface**

In this test, input and output ports 0 through 3 are tested. In addition, the disable feature of the input ports is checked out. Test data is presented on TDS 13.

#### **4.3.4 Timing and Control**

In this test, the proper time intervals of I/H, DUMP, INTCMPL, TSCMPL, STOP, and ANTENNA STROBE are verified. In addition to the above tests, the test set also checks the input ports 16 and 17, output port #13 (4 MSBs), output port 14, input port #15 (DAC BSY signal), and output port #13 (4 LSBs). Test data is presented on TDS 13.

#### **4.3.5 Spacecraft Interface**

In this test, the STE is turned on and initialized. The STE is tested with a series of self-tests to verify the readiness of the STE to test flight hardware. After successfully passing the self-tests, the STE is used to simulate the spacecraft command signals and retrieve limited test data for the remaining signal processor tests. STE test data is presented on TDS 14.

#### **4.3.6 Relay Control**

This test verifies the operation of the module power command and the survival heater command. The presence of the +10 volt Interface power is verified. The Scanner and Compensator relay drive and position indicators are also verified. Test data is presented on TDS 14.

### **4.4 Analog Processor**

#### **4.4.1 Independence of Measurements**

This test is performed using the Analog CCA Test Fixture, the Integrate and Dump Filter and the Analog Mux and A/D Converter CCAs. The test gives a measurement of the sample-to-sample crosstalk within a channel, which is dependent on the completeness of the dump of the integration capacitor. Test data is presented on TDS 15.

#### **4.4.2 Integrate/dump filter, radiometric data multiplexing, and digitization tests**

In this test, a 2 volt dc signal is input to each integrate and dump filter, and the channel output code from the A/D converter is measured. The integrator output waveform is also displayed on an oscilloscope for verification of timing. Test data is presented on TDS 16.

#### **4.4.3 Temperature monitoring circuits**

In this test a resistor of value approximating the room temperature of the PRTs is connected at the input of each PRT readout circuit, and the output code from the A/D converter is measured. The reference voltage used in the PRT readout circuits is also measured. Test data is presented on TDS 17.

#### **4.4.4 Analog telemetry**

In this test each of the analog telemetry signals is measured at the ANALOG HSKP jack on the TRU. Test data is presented on TDS 18.

#### **4.5 Scan Drive**

This test includes all CCAs involved in the scan drive function. The circuitry is programmed to provide one complete revolution of the drive motor as it steps through each of the thirty scene positions and the two calibration positions. The circuitry is programmed to park at the Warm Cal, Cold Cal, and the Nadir positions during the test sequence. The GSE test modes are also verified. To verify proper performance, the inertia disk on the motor shaft is visually observed through the one revolution and the various calibration positions. Test data is presented on TDS 19.

#### **4.6 Supply Current**

In this test, the total current drawn by the signal processor from each of the four supply voltages is measured with the signal processor fully populated with CCA's. Test data is presented on TDS 20.

### **5.0 TEST ANOMALIES**

One test anomaly occurred. The anomaly occurred when the motor did not move to the position commanded. The test was stopped and a Test Anomaly Report (attached) was opened (TAR 002393). Troubleshooting revealed that the old/new switches (SW1 & SW2) on the Motor Driver Test Fixture (SK1293785) were found to be intermittent, resulting in improper motor drive. The Test Equipment Anomaly Report (TEAR 0007) was opened, and the switches were removed and replaced. Then the test was continued until completion.

### **6.0 TEST RESULTS**

The METSAT/AMSU A2 SIGNAL PROCESSOR TEST was successfully completed and all test data is within specified limits.



**TEST DATA SHEET 11**  
A2 Continuity Tests (Paragraph 5.2.1)

Enter a Pass or Fail to indicate the result of the tests:

From	To	Signal Name	Pass/Fail
E1	J301-60	CHASSIS GND	Pass
E2	J301-90	CHASSIS GND	Pass
E3	J324-76	CHASSIS GND	Pass
E4	J302-46	CHASSIS GND	Pass
J324-73	J312-70	1.248 MHZ PS CLK	Pass
J324-74	J312-89	5V RTN(1) (1.248 MHZ PS CLK RTN)	Pass
J324-75	J312-91	5V RTN(1) (PS CLK SHIELD)	Pass

Assembly No. 1331120-2

Shop Order No. 292309

Serial No. F02

Pass ☒ Fail ☐

Test Engineer [Signature] 5/11/98  
(Signature) (Date)

Quality Control [Signature] MAY 12 '98  
(Signature) (Date)

Customer Representative (Flight hardware only) [Signature] MAY 12 '98  
(Signature) (Date)

**TEST DATA SHEET 12**  
A2 Power Distribution (Paragraphs 5.2.2 & 5.2.3)

1641  
2/24/98

Power Supply Voltages:

+5.7 ± 0.1V: + 5.706  
+15.7 ± 0.1V: + 15.763  
-15.7 ± 0.1V: - 15.726  
+28.7 ± 0.1V: + 28.648

OS  
26

remove shade

Test Set-up Verified:

YES ☒ NO ☐

Para. 5.2.3 Step No.	Connector No.	+5 ±0.5V	P/F	+15 ±0.3V	P/F	-15 ±0.3V	P/F	+28 ±0.56V	P/F	+9 ±1V*	P/F
1	J301									9.47	P
2	J302			+15.04	P	-15.02	P				
3	J303			+15.04	P	-15.02	P				
4	J304			+15.04	P	-15.02	P				
5	J305			+15.04	P	-15.02	P				
6	J306	+4.92	P	+15.04	P	-15.02	P				
6	J307			+15.04	P	-15.02	P				
6	J308	+4.93	P							9.47	P
6	J309	+4.93	P							9.47	P
6	J310	+4.93	P								
6	J311	+4.93	P								
6	J312	+4.93	P								
6	J313	+4.93	P								
6	J315	+4.93	P								
6	J317	+4.93	P	+15.04	P	-15.02	P	+27.9	P		
6	J318	+4.93	P	+15.04	P	-15.02	P				
6	J320	+4.95	P								
6	J321	+4.96	P	+15.04	P	-15.02	P				
6	J322	+4.95	P	+15.04	P	-15.02	P	+27.9	P		
6	J323	+4.95	P	+15.04	P	-15.02	P	+27.9	P		
7	J325							+27.9	P		

\* Measured at paragraph 5.2.5.2 Test  
Assembly No. 133420-2

Shop Order No. 292309

Serial No. F02

Pass ☒ Fail ☐

Test Engineer J. D. Lord

(Signature)

(Date)

Quality Control [Signature]

(Signature)

(Date)

Customer Representative (Flight hardware only) [Signature]

(Signature)

(Date)

MAY 13 '98

MAY 13 '98

TEST DATA SHEET 13 (Sheet 1 of 2)  
A2 Digital Processor (Paragraph 5.2.4)

CPU CCA Serial No. (J312) F09  
Scan Control Interface CCA Serial No. (J315) F21  
Timing and Control CCA Serial No. (J311) F09

5.2.4.1 Memory tests:

5.2.4.1/10 Circle PASS or FAIL to indicate the result of the tests:

Pass Fail

If "Fail", record the error code and error description.

Error Code: N/A

Error Description: N/A

5.2.4.2 CPU tests:

	<u>Measurements</u>	<u>Limits</u>	<u>Pass/Fail</u>
5.2.4.2/10			
Vp-p	<u>3.86V</u>	3.30 - 4.94 V	<u>Pass</u>
T	<u>809ns</u>	761 - 841 ns	<u>Pass</u>

19  
5.2.4.2/21 Circle PASS or FAIL to indicate if LEDs indicate CCA passed or failed:

Pass Fail

5.2.4.3 Scan Control Interface Tests:

5.2.4.3/14	The input ports 0 and 1 tests	<u>Pass</u>	Fail
5.2.4.3/21	Inhibit input port 0 and 1 tests	<u>Pass</u>	Fail
5.2.4.3/29	The input ports 2 and 3 tests	<u>Pass</u>	Fail
5.2.4.3/40	The output ports 0 and 1 tests	<u>Pass</u>	Fail

If "Fail", record the error code and error description.

Error Code: N/A

Error Description: N/A

TEST DATA SHEET 13 (Sheet 2 of 2)  
A2 Digital Processor (Paragraph 5.2.4)

5.2.4.4 Timing and Control Tests:

5.2.4.4/13	The Integrate and Hold pulse and the Dump pulse at the card rack slot J307.	Pass	Fail
5.2.4.4/25	The Integrate and Hold pulse and the Dump pulse at the card rack slot J301.	Pass	Fail
5.2.4.4/35	The Antenna Strobe pulse test.	Pass	Fail
5.2.4.4/47	The test of the interface to the Temp. Sensor Analog Mux card rack slot J303.	Pass	Fail
5.2.4.4/59	The test of the interface to the Analog Mux and Converter card rack slot J308.	Pass	Fail

If "Fail", record error code and error description:

Error Code:

N/A

Error Description:

N/A

Assembly No. 1331120-2

Shop Order No. 292309

Serial No. F-02

Pass ☒ Fail ☐

Test Engineer D. Lind 5/11/98  
(Signature) (Date)

Quality Control [Signature] MAY 12 '98  
(Signature) (Date)

Customer Representative (Flight hardware only)

[Signature] MAY 12 '98  
(Signature) (Date)

**TEST DATA SHEET 14**  
A2 Relay Driver Tests (Paragraph 5.2.5.2)

Spacecraft Interface #2 CCA (J308) Ser. No. F21  
Spacecraft Interface #1 CCA (J309) Ser. No. F18  
Parallel to Serial Converter CCA (J310) Ser. No. F20  
Relay Driver And Current Monitor CCA (J317) Ser. No. F02

Test Set-up Verified: Yes ☒ No ☐ STE Self Test: Pass ☒ Fail ☐

Step No.	Test Description	Pass/Fail
<del>23</del> 24	Module power connects	P
<del>29</del> 30	Survival heater power turns on	P
<del>30</del> 31	Survival heater power turns off	P
<del>31</del> 32	Module power disconnects	P
<del>33</del> 34	Scanner 2 power turns on	P
<del>34</del> 35	Compensator motor power turns on	P
<del>38</del> 36	Scanner 2 power turns off	P
<del>39</del> 36	Compensator motor power turns off	P
<del>36</del> 37	Module power disconnect	P

QC  
226

Assembly No. 1331120-2

Shop Order No. 292309

Serial No. F02

Pass ☒ Fail ☐

Test Engineer D. Lund 5/11/98  
(Signature) (Date)

Quality Control [Signature] MAY 12 '98  
(Signature) (Date)

Customer Representative (Flight hardware only) [Signature]  
(Signature)

MAY 12 '98  
(Date)

TEST DATA SHEET 15  
A2 Independence Of Measurements (Paragraph 5.2.6.1)

Integrate and Dump CCA (J307): Serial No. F23

Analog Mux and A/D Converter CCA (J306): Serial No. F07

Test Set-up verified: YES ☒ NO ☐

Supply (V)	Measured Value (V)	Limits (V)
+5	<u>4.79</u>	+5 ± 0.25
+15	<u>15.823</u>	+15 ± 1.0
-15	<u>-15.445</u>	-15 ± 1.0

Channel No.	Average for SIGNAL switch in Hi position	Average for SIGNAL switch in LO position	Measurement Dependence ≤0.01%	Pass/Fail
0	14088.5	14087.2	0.00198	PASS
1	14103.2	14101.3	0.0029	PASS
2	14080.79.7	14077.6	0.0032	PASS
3	14076	14074.2	0.00275	PASS

*6/7/98*

Assembly No. 1331120-2

Shop Order No. 292309

Serial No. F02

Pass ☒ Fail ☐

Test Engineer D. L. L. 5/11/98  
(Signature) (Date)

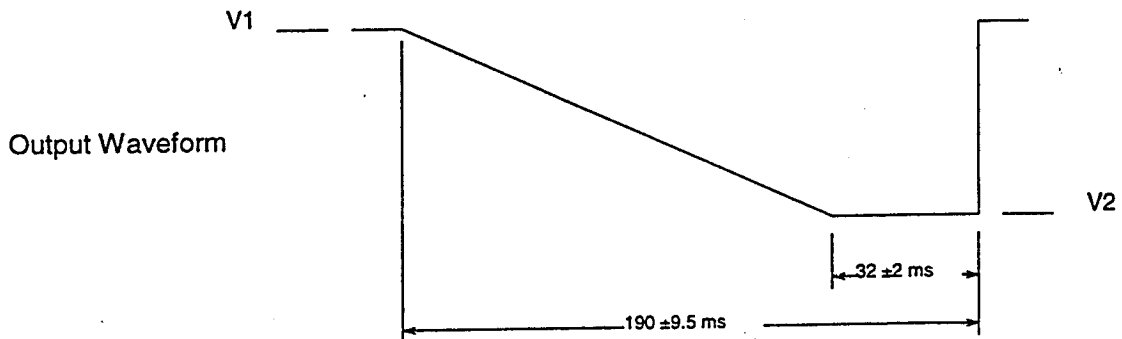
Quality Control [Signature] MAY 18 '98  
(Signature) (Date)

Customer Representative (Flight hardware only) [Signature] MAY 18 '98  
(Signature) (Date)

**TEST DATA SHEET 16**  
A2 Integrator Signal Multiplexing, And Digitization (Paragraph 5.2.6.2)

Analog Mux and A/D Converter CCA(J306): Ser. No. F07

Integrate and Dump/Filter CCA (J307): Ser. No. F23



Channel	Data	Data Limits	Data Pass/Fail	Integrator Waveform Pass/Fail
1	27891	26125 to 29757	PASS	PASS
2	27839	26125 to 29757	PASS	PASS

Signal Name	Pass/Fail
I/H	PASS
Dump	PASS
+5 Vdc GSE Interlock A	PASS
+5 Vdc GSE Interlock B	PASS

Assembly No. 1331120-2

Shop Order No. 292309

Serial No. F02

Pass ☒ Fail ☐

Test Engineer [Signature] 5/11/98  
(Signature) (Date)

Quality Control [Signature] MAY 12 '98  
(Signature) (Date)

Customer Representative (Flight hardware only) [Signature]  
(Signature)

**TEST DATA SHEET 17**  
**A2 Temperature Monitoring Circuits (Paragraph 5.2.6.3)**

Temperature Sensor Analog Mux CCA (J303) Serial No. F13

Temperature Sensor B CCA (J304) Serial No. F22

Temperature Sensor A CCA (J305) Serial No. F15

Dig. A Temp No.	Description	Data	Data Limits	Pass/Fail
1	Scan Motor	30973	28259 to 32513	P
2	Feedhorn	30797	28259 to 32513	P
3	RF MUX	30999	28259 to 32513	P
4	Mixer IF CH 1	31152	28259 to 32513	P
5	Mixer IF CH 2	31146	28259 to 32513	P
6	LO Channel 1	31023	28259 to 32513	P
7	LO Channel 2	30700	28259 to 32513	P
8	Comp Motor	31166	28259 to 32513	P
9	Subreflector	30914	28259 to 32513	P
10	Dc/Dc Converter	30678	28259 to 32513	P
11	RF Shelf	30933	28259 to 32513	P
12	Det/Preamp	30813	28259 to 32513	P
13	Warm Load Cntr	22266	20339 to 23401	P
14	Warm Load 1	22003	20339 to 23401	P
15	Warm Load 2	22476	20339 to 23401	P
16	Warm Load 3	22361	20339 to 23401	P
17	Warm Load 4	22526	20339 to 23401	P
18	Warm Load 5	22521	20339 to 23401	P
19	Warm Load 6	22438	20339 to 23401	P
20	Thermal Reference	25057	23340 to 26320	P

Assembly No. 1331120-2

Shop Order No. 292309

Serial No. F02

Pass ☒ Fail ☐

Test Engineer [Signature] 5/11/98  
(Signature) (Date)

Quality Control [Signature] MAY 12 '98  
(Signature) (Date)

Customer Representative (Flight hardware only) [Signature] MAY 18 '98  
(Signature) (Date)



**TEST DATA SHEET 18**  
A2 Analog Telemetry (Paragraph 5.2.6.4)

ANALOG HSKP Switch Position	DVM Reading (V)	Limits (V)	Pass/Fail
1	2.994	2.85 to 3.15	P
2	3.458	3.30 to 3.66	P
3	2.998	2.87 to 3.17	P
4	3.011	2.85 to 3.15	P
5	3.452	3.30 to 3.66	P
6	3.007	2.87 to 3.17	P
10	3.569	3.42 to 3.78	P
12	2.962	2.84 to 3.14	P
13	2.954	2.84 to 3.14	P
21	0.0032	-0.05 to 0.05	P
21	2.96	2.8 to 3.4	P
22	0.0089	-0.05 to 0.05	P
22	2.96	2.8 to 3.4	P

Assembly No. 1331120-2

Shop Order No. 292309

Serial No. F02

Pass ☒ Fail ☐

Test Engineer D. Lund 5/11/98  
(Signature) (Date)

Quality Control [Signature] MAY 12 '98  
(Signature) (Date)

Customer Representative (Flight hardware only) [Signature] MAY 12 '98  
(Signature) (Date)

**TEST DATA SHEET 19**  
**A2 Scan Drive/Compensator Drive/Signal Processor Tests (Paragraph 5.3.1)**

**A2 Scan Drive Subsystem CCAs:**

Interface Converter CCA (J318) Ser. No. F30  
Resolver Data Isolator CCA (J320) Ser. No. F17  
R/D Converter/Oscillator CCA (J321) Ser. No. F10  
Motor Drive 3-hall sensor CCA (J322) Ser. No. F01

Test Set-up Verified: Yes ☒ No ☐

Para./Step No.	Mode	Pass/Fail
5.3.1.2.1/12	Motor in warm cal position	P
5.3.1.2.2/3	Motor in nadir position.	P
5.3.1.2.3/2	Motor in cold cal position 1	P
5.3.1.2.3/3	Motor in cold cal position 2	P
5.3.1.2.3/4	Motor in cold cal position 3	P
5.3.1.2.3/5	Motor in cold cal position 4	P
5.3.1.2.4/5	Motor in full scan mode	P
5.3.1.2.5/9	GSE mode 2	P
5.3.1.2.6/4	GSE mode 4	P
5.3.1.2.7/4	GSE mode 5	P
5.3.1.2.8/4	GSE mode 1	P
5.3.1.2.9/4	GSE mode 3	P
5.3.1.2.9/7	GSE mode 7	P
5.3.1.2.10/2	Scan power off	P

**A2 Compensator Drive Subsystem CCAs:**

Motor Driver 3-hall Sensor CCA (J323) Ser. No. F11

Test Set-up Verified: Yes ☒ No ☐

Para./Step No.	Mode	Pass/Fail
5.3.2.2/4	Compensator motor operation	P
5.3.2.2/5	Power-off test of compensator motor	P

Assembly No. 1331120-2 Shop Order No. 292309

Serial No. F02 Pass ☒ Fail ☐

Test Engineer [Signature] 5/11/98 Quality Control [Signature] MAY 13 '98  
(Signature) (Date) (Signature) (Date)

Customer Representative (Flight hardware only) [Signature] MAY 12 '98  
(Signature) (Date)

**TEST DATA SHEET 20**  
**A2 Supply Currents (Paragraph 5.4)**

Voltages	Measured Current	Limits (in mA)	Pass/Fail
+28.7 V	7.54	6 to 12	P
+5.7 V	5.33	400 to 700	P
+15.7 V	129	100 to 196	P
-15.7 V	154	-110 to -218	P

Assembly No. 1331120-2

Shop Order No. 292309

Serial No. FOR

Pass ☒ Fail ☐

Test Engineer [Signature] 5/11/98  
(Signature) (Date)

Quality Control [Signature] MAY 12 '98  
(Signature) (Date)

Customer Representative (Flight hardware only) [Signature] MAY 13 '98  
(Signature) (Date)

TAR NO. 002393

TEST ANOMALY RECORD

(REF. MPI 00-005)

SYSTEM NO.

 DATE 5/8/98 Page 1 of 1  
 SPEC (MPI, AE, ...) AE-26574 REV NC  
 CUMULATIVE TIME — hrs — min  
 ELAPSED TIME — hrs — min

 ASSY NAME METSAT A2  
 ASSY P/N 1331120-2 REV J  
 ASSY S/N F02  
 S/O NO. 292309  
 TEST OPER NO. 0120 STEP A

 First time for failure at this point? YES ☒ NO ☐ Test Proc Para No. where failure occurred 5.3.1.2.5  
 Type of test (EXP: T/C 1 FFT HOT) FUNCTIONAL Para Step No. 7

 DESCRIPTION OF ANOMALY (LIST EXPECTED AND RECORDED VALUES): INERTIA DISK SHOULD MOVE TO 12 O'CLOCK POSITION; DID NOT MOVE

 TECH/TE NOTIFIED TEAM LEADER NAME A. NIETO

DEFECT CODE

TP

TECH/ DATE

5/8/98

## INSTRUCTIONS:

OPER. STATION

8010 TEST Test to notify inspection of failure/anomaly. (Except engineering, MPI or Pretest.)8015 INSP Inspection to notify DCMC of failure / anomaly. (GFE)

DCMC B. BROWN 5/8/98

## TROUBLESHOOT/REWORK/RETEST ACTION PLAN:

TROUBLESHOOT TO FIND CAUSE OF MOTOR INERTIA DISK NOT MOVING

 NOTE: NOTIFIED SERGEY K. VIA TELEPHONE BY AL NIETO. GAVE OK TO PROCEED WITH TEST.  
 ALSO LEFT VOICE MAIL FOR RICARDO R. 9:45 AM 5/8/98

NOTE: Remove pink copy here. Deliver to QA drop box.

 TE [Signature] QE [Signature] RE [Signature] DATE 5/8/98  
 TEAM LEADER

## TROUBLESHOOT/REWORK/RETEST/INSTRUCTIONS:

OPER. STATION

PROD INSP RMH

 8020 TEST CHECK FOR PROPER OPERATION OF OLD/NEW [Signature]  
 TOGGLE SWITCHES ON MOTOR DRIVER TEST FIXTURE 5/8/98  
 BY OBSERVING +28V CURRENT AS SWITCH POSITION  
 IS CHANGED.

 8030 TEST RETEST AFTER TEST FIXTURE REWORK  
 (AE-26574 PAR 5.3.1.2.5 STEP 7) 5/11/98

NOTE: For parts replacement continuation page is MANDATORY

 PASSED  
 Retest/Start  
 TECH DATE 5/11/98

 FAILED  
 Retest/Start  
 TECH DATE

 GO TO S/O, CONT., OR  
 OPERATION 01200 PAGE 10

 TE/ME [Signature] QE [Signature]  
 DATE 5/11/98


WHAT WAS THE CAUSE OF THE ANOMALY?

 OLD/NEW SWITCHES (SW1 + SW2) WERE  
 FOUND TO BE INTERMITTENT, RESULTING  
 IN IMPROPER MOTOR DRIVE

CORRECTIVE ACTION:

 INITIATE TEAR FOR TEST FIXTURE,  
 REMOVE AND REPLACE SWITCHES  
 (TEAR 0007)

 DATE 5/11/98  
 TEAM LEADER

 <b>NASA</b> National Aeronautics and Space Administration				Report Documentation Page			
1. Report No. ---		2. Government Accession No. ---		3. Recipient's Catalog No. ---			
4. Title and Subtitle  Integrated Advanced Microwave Sounding Unit-A (AMSU-A), Engineering Test Report				5. Report Date 8 June 1998			
				6. Performing Organization Code ---			
7. Author(s)  D. Luu				8. Performing Organization Report No. 11159			
				10. Work Unit No. ---			
9. Performing Organization Name and Address Aerojet 1100 W. Hollyvale Azusa, CA 91702				11. Contract or Grant No. NAS 5-32314			
				13. Type of Report and Period Covered Final			
12. Sponsoring Agency Name and Address NASA Goddard Space Flight Center Greenbelt, Maryland 20771				14. Sponsoring Agency Code ---			
15. Supplementary Notes  ---							
16. ABSTRACT (Maximum 200 words )  This is the METSAT A2 Signal Processor Engineering Test Report (P/N 1331120-2, S/N F02) for the Integrated Advanced Microwave Sounding Unit-A (AMSU-A).							
17. Key Words (Suggested by Author(s))  EOS Microwave System			18. Distribution Statement  Unclassified --- Unlimited				
19. Security Classif. (of this report)  Unclassified		20. Security Classif. (of this page)  Unclassified		21. No. of pages  ---			
				22. Price  ---			

NASA FORM 1626 OCT 86

PREPARATION OF THE REPORT DOCUMENTATION PAGE

The last page of a report facing the third cover is the Report Documentation Page, RDP. Information presented on this page is used in announcing and cataloging reports as well as preparing the cover and title page. Thus, it is important that the information be correct. Instructions for filling in each block of the form are as follows:

Block 1. Report No. NASA report series number, if preassigned.

Block 2. Government Accession No. Leave blank.

Block 3. Recipient's Catalog No. Reserved for use by each report recipient.

Block 4. Title and Subtitle. Typed in caps and lower case with dash or period separating subtitle from title.

Block 5. Report Date. Approximate month and year the report will be published.

Block 6. Performing Organization Code . Leave blank.

Block 7. Authors. Provide full names exactly as they are to appear on the title page. If applicable, the word editor should follow a name.

Block 8. Performing Organization Report No. NASA installation report control number and, if desired, the non-NASA performing organization report control number.

Block 9. Performing Organization Name and Address. Provide affiliation (NASA program office, NASA installation, or contractor name) of authors.

Block 10. Work Unit No. Provide Research and Technology Objectives and Plants (RTOP) number.

Block 11. Contract or Grant No. Provide when applicable.

Block 12. Sponsoring Agency Name and Address. National Aeronautics and Space Administration, Washington, D.C. 20546-0001. If contractor report, add NASA installation or HQ program office.

Block 13. Type of Report and Period Covered. NASA formal report series; for Contractor Report also list type (interim, final) and period covered when applicable.

Block 14. Sponsoring Agency Code. Leave blank.

Block 15. Supplementary Notes. Information not included

elsewhere: affiliation of authors if additional space is required for Block 9, notice of work sponsored by another agency, monitor of contract, information about supplements (file, data tapes, etc.) meeting site and date for presented papers, journal to which an article has been submitted, note of a report made from a thesis, appendix by author other than shown in Block 7.

Block 16. Abstract. The abstract should be informative rather than descriptive and should state the objectives of the investigation, the methods employed (e.g., simulation, experiment, or remote sensing), the results obtained, and the conclusions reached.

Block 17. Key Words. Identifying words or phrases to be used in cataloging the report.

Block 18. Distribution Statement. Indicate whether report is available to public or not. If not to be controlled, use "Unclassified-Unlimited." If controlled availability is required, list the category approved on the Document Availability Authorization Form (see NHB 2200.2, Form FF427). Also specify subject category (see "Table of Contents" in a current issue of STAR) in which report is to be distributed.

Block 19. Security Classification (of the report). Self-explanatory.

Block 20. Security Classification (of this page). Self-explanatory.

Block 21. No. of Pages. Count front matter pages beginning with iii, text pages including internal blank pages, and the RDP, but not the title page or the back of the title page.

Block 22. Price Code. If Block 18 shows "Unclassified-Unlimited," provide the NTIS price code (see "NTIS Price Schedules" in a current issue of STAR) and at the bottom of the form add either "For sale by the National Technical Information Service, Springfield, VA 22161-2171" or "For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402-0001," whichever is appropriate.

## GENERAL INSTRUCTIONS FOR COMPLETING SF 298

The Report Documentation Page (RDP) is used in announcing and cataloging reports. It is important that this information be consistent with the rest of the report, particularly the cover and title page. Instructions for filing in each block of the form follow. It is important to stay within the lines to meet optical scanning requirements.

Block 1. Agency Use Only (Leave blank)

Block 2. Report Date Full publication date including day, month, and year, if available (e.g., 1 Jan 88). Must cite at least the year.

Block 3. Type of Report and Dates Covered State whether report is interim, final, etc. If applicable, enter inclusive report dates (e.g., 10 Jun 87 - 30 Jun 88).

Block 4. Title and Subtitle A title is taken from the part of the report that provides the most meaningful and complete information. When a report is prepared in more than one volume report the primary title, add volume number and include subtitle for the specific volume. On classified documents enter the title classification in parentheses.

Block 5. Funding Numbers To include contract and grant numbers; may include program element number(s), project number(s), task number(s), and work unit number(s). Use the following labels:

C	-	Contract	PR	-	Project
G	-	Grant	TA	-	Task
PE	-	Program Element	WU	-	Work Unit Accession No.

Block 6. Author(s) Name(s) of person(s) responsible for writing the report, performing the research, or credited with the content of the report. If editor or compiler, this should follow the name(s).

Block 7. Performing Organization Name(s) and Address(es). Self-explanatory.

Block 8. Performing Organization Report Number. Enter the unique alphanumeric report number(s) assigned by the organization performing the report.

Block 9. Sponsoring/Monitoring Agency Name(s) and Address(es) Self-explanatory.

Block 10. Sponsoring/Monitoring Agency Reports Number (if known).

Block 11. Supplementary Notes. Enter information not included elsewhere such as: Prepared in cooperation with ...; Trans. of ...; To be published in ... When a report is revised, include a statement whether the new report supersedes or supplements the older report.

Block 12.a Distribution/Availability Statement Denotes public availability or limitations. Cite any availability to the public. Enter additional limitations or special markings in all capitals (e.g., NOFORN, REL, ITAR).

DOD - See DoDD 5230.24 *Distribution Statement on Technical Documents*

DOE - See authorities.

NASA - See Handbook NHB 2200.2.

NTIS - Leave blank.

Block 12.b Distribution Code.

DOD - Leave blank.

DOE - Enter DOE distribution categories from the standard Distribution for Unclassified Scientific and Technical Reports.

NASA - Leave blank.

NTIS - Leave blank.

Block 13. Abstract. Include a brief *Maximum 200 words* factual summary of the most significant information contained in the report.

Block 14. Subject Terms. Keywords or phrases identifying major subjects in the report.

Block 15. Number of Pages. Enter the total number of pages.

Block 16. Price Code. Enter appropriate price code (NTIS only).

Block 17 - 19. Security Classifications. Self-explanatory. Enter U.S. Security Classification in accordance with U.S. Security Regulations (i.e., UNCLASSIFIED). If form contains classified information, stamp classification on the top and bottom of the page.

Block 20. Limitation of Abstract. This block must be completed to assign a limitation to the abstract. Enter either UL (unlimited) or SAR (same as report). An entry in this block is necessary if the abstract is to be limited. If blank, the abstract is assumed to be unlimited.



# DOCUMENT APPROVAL SHEET

TITLE METSAT A2 Signal Processor Engineering Test Report (P/N: 1331120-2, S/N: F02)			DOCUMENT NO. Report 11159 8 June 1998	
INPUT FROM: D. Luu	DATE	CDRL: 207	SPECIFICATION ENGINEER: <i>Dennis Luu</i>	DATE 6/15/98
CHECKED BY:		DATE	JOB NUMBER:	DATE
APPROVED SIGNATURES			DEPT. NO.	DATE
Product Team Leader (A. Nieto) <i>A Nieto</i>			8341	6/15/98
Systems Engineer (R. Platt) <i>R Platt</i>			8311	6/15/98
Design Assurance (E. Lorenz) <i>E Lorenz</i>			8331	6/16/98
Quality Assurance (R. Taylor) <i>R Taylor</i> For			7831	6/16/98
Technical Director/PMO (R. Hauerwaas) <i>R Hauerwaas</i>			4001	6/16/98
Configuration Management (J. Cavanaugh) <i>J Cavanaugh</i>			8361	6/16/98
By my signature, I certify the above document has been reviewed by me and concurs with the technical requirements related to my area of responsibility.				
RELEASE (Data Center) FINAL				
Please return this sheet and the reproducible master to Jim Kirk (Bldg. 1/Dept. 8631), ext. 2081.				



REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE		3. REPORT TYPE AND DATES COVERED
4. TITLE AND SUBTITLE Integrated Advanced Microwave Sounding Unit-A (AMSU-A), Engineering Test Report			5. FUNDING NUMBERS  NAS 5-32314	
6. AUTHOR(S) D. Luu				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Aerojet 1100 W. Hollyvale Azusa, CA 91702			8. PERFORMING ORGANIZATION REPORT NUMBER  11159 8 June 1998	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) NASA Goddard Space Flight Center Greenbelt, Maryland 20771			10. SPONSORING/MONITORING AGENCY REPORT NUMBER  ---	
11. SUPPLEMENTARY NOTES  ---				
12a. DISTRIBUTION/AVAILABILITY STATEMENT  ---			12b. DISTRIBUTION CODE  ---	
13. ABSTRACT (Maximum 200 words)  This is the METSAT A2 Signal Processor Engineering Test Report (P/N 1331120-2, S/N F02) for the Integrated Advanced Microwave Sounding Unit-A (AMSU-A).				
14. SUBJECT TERMS  EOS Microwave System			15. NUMBER OF PAGES	
			16. PRICE CODE  ---	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT SAR	